THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte KIYOMI KISHI,
SETSUO TSURUTA, TOSHIYA OSHIMA
and
TOSHIHIRO EGUCHI

_____

Appeal No. 95-4187
Application 07/835,374[1]

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HEARD: November 3, 1998

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[1] Application for patent filed February 14, 1992.

Before URYNOWICZ, THOMAS and FLEMING, ***Administrative Patent Judges***.

FLEMING, ***Administrative Patent Judge***.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1, 3 through 8, 11, 14 through 17 and 22 through 25. Claims 2, 9, 10, 12, 13 and 18 through 21 have been allowed.

Appellants' invention relates to a problem-solving method and a problem-solving system using a knowledge-based computer system for restoring a train schedule such that an identical interval between running trains is guaranteed when disturbances occur. The method and system require circumstantial judgement.

Independent claim 1 is reproduced as follows:

1. A problem solving method comprising the processing steps of:

storing element knowledge each represented as a data block for denoting a goal or a subgoal or a strategy hierarchically organized for problem solving, plan generation and user guiding;

setting harmonizing knowledge represented as a data block for selecting and/or changing the element knowledge;

storing each content of the harmonizing knowledge in a memory called a slot;

selecting and/or changing the element knowledge in accordance with the contents of the harmonizing knowledge; and

executing a plan generation and a problem solving by use of the element knowledge thus selected and/or changed.

The reference relied on by the Examiner is as follows:

Setsuo Tsuruta et al. (Tsuruta), ***"A KNOWLEDGE-BASED INTERACTIVE TRAIN SCHEDULING SYSTEM -- AIMING AT LARGE-SCALE COMPLEX PLANNING EXPERT SYSTEMS***," Int'l Workshop on Artificial Intelligence for Indus. Applications, 490-495, IEEE (1988).

Claims 1, 3 through 8, 11, 14 through 17 and 22 through 25 stand rejected under 35 U.S.C. § 102 as being anticipated by Tsuruta.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the briefs[2] and the answer for the respective details thereof.

OPINION

After a careful review of the evidence before us, we agree with the Examiner that claims 1, 3 through 6 and 8, 11, 14 and 22 are anticipated under 35 U.S.C. § 102 by Tsuruta.

However, we do not agree with the Examiner that claims 7, 15 through 17 and 23 through 25 are properly rejected under 35 U.S.C. § 102.

[2] Appellants filed an appeal brief on April 25, 1995. We will refer to this appeal brief as simply the brief. Appellants filed a reply appeal brief on September 11, 1995. We will refer to this reply appeal brief as the reply brief. The Examiner stated in the Examiner's letter mailed October 23, 1995 that the reply brief has been noted and the Examiner's position is unchanged. Therefore, the reply brief has been entered and considered by the Examiner.

At the outset, we note that Appellants have indicated on page 3 of the brief that claims 1, 3-8, 11, 14-17 and 22-25 cannot be grouped together. We note that Appellants have argued claims 7, 8, 11, 14 through 17 and 23 through 25 separately. However, we note that Appellants have not argued claims 1, 3 through 6 and 22 separately as per 37 CFR § 1.192(c)(5) revised Oct. 22, 1993 which was controlling at the time of Appellants filing the brief. 37 CFR § 1.192(c)(5) amended October 22, 1993 states:

> For each ground of rejection which appellant contests and which applies to more than one claim, it will be presumed that the rejected claims stand or fall together unless a statement is included that the rejected claims do not stand or fall together, and in the appropriate part or parts of the argument under subparagraph (c)(6) of this section appel-lant presents reasons as to why appellant considers the rejected claims to be separately patentable.

As per 37 CFR § 1.192(c)(5), which was controlling at the time of Appellants filing the brief, we will, thereby, consider Appel- lants' claims 1, 3 through 6 and 22 to stand or fall together, with claim 1 being considered the representative

claim. However, we will consider claims 7, 8, 11, 14 through 17 and 23 through 25 separately.

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. ***See In re King***, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and ***Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co***., 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984). "Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention." ***RCA Corp. v. Applied Digital Data Systems, Inc.***, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.), *cert. dismissed,* 468 U.S. 1228 (1984), *citing* ***Kalman v. Kimberly-Clark Corp.***, 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983).

Appellants argue on pages 6 through 12 of the brief that Tsuruta fails to teach the step of setting harmonizing knowledge represented as a data block for selecting and/or changing the element knowledge, storing each content of the harmonizing knowledge in a memory called a slot and selecting

and/or changing the element knowledge in accordance with the contents of the harmonizing knowledge. Appellants argue that Tsuruta teaches that a strategy is selected in accordance with the contents of an actor instead of using independent objects representing harmonizing knowledge. In addition, Appellants argue that Tsuruta does not teach changing the element knowledge in accordance with the contents of the harmonizing knowledge.

The Examiner points to Tsuruta's teachings on page 492 and specifically steps 1-3. The Examiner points out that Tsuruta teaches that a strategy is selected in accordance with the knowledge contents of an actor. The Examiner argues that the Tsuruta strategy reads on Appellants' claimed "element knowledge" and the Tsuruta knowledge contents of the actor reads on Appel- lants' claimed "harmonizing knowledge."

In the reply brief, Appellants state that they fail to find any teaching in the steps 1-3 taught by Tsuruta that the contents of an actor includes harmonizing knowledge. Appellants argue that the selection is not described as being

performed based upon data contained within the actor as alleged by the Examiner.

As pointed out by our reviewing court, we must first determine the scope of the claim. "[T]he name of the game is the claim." ***In re Hiniker Co.***, 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998).

We note that Appellants' claim 1 recites "selecting ***and/or*** changing the element knowledge in accordance with the contents of the harmonizing knowledge" (emphasis added). The use of the Appellants' claim language, "and/or," reasonably allows for the reading of claim language as only requiring selecting the element knowledge in accordance with the contents of the harmonizing knowledge.

Moreover, when interpreting a claim, words of the claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor. ***Carroll Touch, Inc. v. Electro Mechanical Sys., Inc.,*** 15 F.3d 1573, 1577, 27 USPQ2d 1836, 1840 (Fed. Cir. 1993). Although an inventor is indeed free to define the specific terms used

to describe his or her inven- tion, this must be done with reasonable clarity, deliberateness, and precision. ***In re Paulsen***, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). Our reviewing court states in ***In re Zletz***, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) that "claims must be interpreted as broadly as their terms reasonably allow."

We note that Appellants' specification states that the harmonizing knowledge 52 shown in Figure 1 includes "knowledge
for selecting necessary element knowledge therefrom, knowledge for solving conflicts, if any, existing between element knowledge 51, and knowledge for altering element knowledge 51 to be suit- able for the current state of the system." Thus, we find that harmonizing knowledge as used by the Appellants' specification is knowledge for selecting necessary element knowledge.

We appreciate Appellants' argument that Tsuruta does not teach changing the element knowledge in accordance with the contents of the harmonizing knowledge. However, we find

that Appellants' claim language only requires selecting the element knowledge in accordance with the contents of the harmonizing knowledge. Furthermore, we find that Appellants' claimed "harmonizing knowledge" covers any knowledge for selecting necessary element knowledge.

Tsuruta teaches a knowledge-based interactive train scheduling system. On page 492, first column, Tsuruta teaches that the system uses a multiple programming paradigm approach in which the knowledge for the train scheduling is represented by objects. Tsuruta further teaches strategy objects which are objects representing strategies to attain goals or subgoals of train scheduling. Therefore, we find that Tsuruta's strategy objects meet Appellants' claimed element knowledge.

Tsuruta further teaches another object called actors. Actors are actor model knowledge used to select the strategy. On page 492, first column, Tsuruta teaches that the actor has knowledge such as goal, state, strategy, etc. as shown in Figure 1. Tsuruta teaches that the actor models train dis- patchers. In the second column of page 492,

Tsuruta teaches that Figure 2 shows inferences used by actors to select a strategy object. Thus, we find that Tsuruta's actor knowledge meets Appellants' claimed harmonizing knowledge. In addition, we find that Tsuruta teaches selecting the element knowledge (strategy objects) in accordance with the contents of the harmonizing knowledge (actor knowledge) as recited in Appellants' claim 1. Thus, we find that Tsuruta teaches all of the limitations of Appellants' claim 1. Therefore, we will sustain the Examiner's rejection of claims 1, 3 through 6 and 22.

On page 12 of the brief, Appellants argue that Tsuruta fails to teach that element knowledge is described in the form of a goal strategy network representing a set having a network structure and that the set including goal objects of knowledge, such as knowledge to be obtained for a problem solution and

lower level subgoals and strategy objects of knowledge, such as procedures and rules, which are employed to subdivide the goal and the lower level goals into lower goals for achieving

the goal and to directly obtain the goal without subdividing the goal as recited in claim 8. We find that Tsuruta teaches these limitations in the first column of page 492 in the section

"b) strategy objects" and on page 491, second column.

Appellants further argue that Tsuruta fails to teach the step of proposing a result and inputting a result of judgement conducted by a user as recited in claim 11 and Tsuruta fails to teach that the harmonizing knowledge can be set and modified via an input/output device as recited in claim 14. Tsuruta teaches in the first column of page 491 that the machine shows and asks the user the information needed and the user can intervene to modify and resume the machine's automatic planning process or to change the planning strategy of the machine in order for the machine to cooperate with a human to obtain common-sense reasoning which cannot be accomplished by the machine alone. Therefore, we find that Tsuruta teaches these limitations recited in Appellants' claims 11 and 14.

Appellants on pages 12 through 14 argue the specific limitations recited in claims 7, 15 through 17 and 23 through 25.

We note that the Examiner has not addressed these limitations. Upon a review of Tsuruta, we fail to find any express teachings of these limitations.

In view of the foregoing, the decision of the Examiner rejecting claim 1, 3 through 6 and 8, 11, 14 and 22 under 35 U.S.C. § 102 is affirmed; however, the decision of the Examiner rejecting claims 7, 15 through 17 and 23 through 25 under 35 U.S.C. § 102 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

STANLEY M. URYNOWICZ, JR.)
Administrative Patent Judge)

) BOARD OF PATENT
) APPEALS AND
) INTERFERENCES
MICHAEL R. FLEMING)
Administrative Patent Judge)

THOMAS, ***Administrative Patent Judge***, Concurring:

I fully concur in the reasoning, findings and conclusions of my colleagues in affirming-in-part the rejection of certain claims under 35 U.S.C. § 102. Even under this section and certainly within the provisions of 35 U.S.C. § 103, I would add separately that the first column of page 492 of the reference to Tsuruta indicates that the "actor models a scheduling expert, or his reasoning process, that is, models dynamic knowledge or somewhat active acknowledge." This teaching provides additional dimensions of understanding from an artisan's perspective of the nature and types of knowledge that may be applied against the broadly defined element knowledge and harmonizing knowledge of the claims on appeal.

Additionally, from my study of the disclosed and claimed invention, I conclude that all pending claims 1 to 25

should be made subject to a rejection under 35 U.S.C. § 101 as being directed to non-statutory subject matter. It appears to me that substantially all claims encompass and are so broad as to be directed to an abstract idea or intellectual concept of problem-solving without limit. Twenty two of the twenty five pending claims are not applied in any manner to a train scheduling environment. It is significant that method claims 1 to 21 and system claims 22 to 25 do not recite an expert system or computerized system per se. Instead, they merely recite only broadly defined problem-solving methods or a system, both of

which expansively encompass mental or thought processes of storing or memorizing information or such problem solving using pencil and paper. The claims are directed to abstract processes of solving problems not necessarily being performed by a machine or computer; they also do not appear to be directed to any practical utility except perhaps for dependent claims 23 through 25. The disclosed train scheduling basis is not recited in each independent claim on appeal. Even in

context, the broadly recited "system" claims 22 through 25 and their attendant recited "means" are not in my view necessarily directed to a "machine" within 35 U.S.C. § 100. A "system" is as much a set of procedures as it is hardware or structure. The same may be said of the goal strategy network of certain claims which are said to represent a set having a network structure, where no true structure or machine is necessarily required.

JAMES D. THOMAS	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES

psb

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